THE NORTH SEA, PAST AND PRESENT: SHIFTING BASELINES AND HUMAN USES

Lindeboom Han

Wageningen IMARES - Institute for Marine Resources and Ecosystem Studies, Haringkade 1, 1976 CP IJmuiden, The Netherlands
E-mail: han.lindeboom @wur.nl

A clear change of species distribution in the North Sea can be deduced when comparing the maps from Olsen's Piscatorial Atlas published in 1883 with present fish surveys. Many species have disappeared from large areas. For example, 20,000km^2 of oyster beds disappeared, most likely due to a combination of overfishing, possibly climate change and diseases. This had large consequences for the local biodiversity. Even in Olsen's time, there was concern about the fishing pressure.

And human pressure upon this vulnerable ecosystem keeps increasing. Apart from traditional uses such as fisheries, gas, oil and sand extraction and shipping, new functions such as wind energy, offshore protection and the possible construction of new islands are using more and more space.

The first offshore wind park is now operational in The Netherlands and a large research program is being conducted concerning the possible effects of this type of park upon benthic fauna, fish, birds and sea mammals. Initial results indicate that some birds profit from the park while others avoid it. At the same time new parks are being planned, and if this continues the Dutch section of the North Sea may be strewn with small-sized wind parks in tens years time. But is this wise? Both for ecological and safety reasons it seems much better to build a few large parks instead of many small ones. And this is just one of the problems with spatial planning in the sea.

For centuries, the Dutch part of the North Sea has been heavily fished. Since the 1960s a large beam trawl fleet has been harvesting sole and plaice using 4 and 12m beam trawls with tickler chains that frequently plough or rake most of the sea floor in this area. The direct effects of this type of fisheries are well known. Large amounts of unwanted by-catch are discarded and die. The long-term effects include destruction of habitats and shifts in biodiversity, species composition or age structure of benthic invertebrate and fish communities. Recent studies show clear differences between the fished and non-fished areas.

The EU has asked the member states to create Marine Protected Areas (MPAs) to stop further deterioration of the marine realm. Plans for their designation are under development.

In the near future, sustainability targets will have to be defined for these areas. However, the development of the marine ecosystem is the result of a very complex interplay between natural and human induced causes, the final result being an integrated summation of the effects of manageable and non-manageable factors. When managing the development of MPAs we have to take into account effects of climate change, pollution, introduced species and other drivers. In the presentation, the possible establishment of MPAs in the southern part of the North Sea and its values for spatial planning and conservation of marine biodiversity will be discussed.